5.925 - 6.425 GHZ COMMON CARRIER BAND

(1) 30 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)	RECEIVE (transmit) (MHZ)
5945.20	 6197.24
5974.85	 6226.89
6004.50	 6256.54
6034.15	 6286.19
6063.80	 6315.84
6093.45	 6345.49
6123.10 1	 6375.14 1
6152.75	 6404.79 1

^{1 -} Alternate channels. These channels are set aside for narrow bandwidth systems and should be used only if all other channels are blocked.

(2) 10 MHZ BANDWIDTH CHANNELS

TRANSMIT		RECEIVE	
(receive)		(transmit	t)
(MHZ)		(MHZ)	
•			
5935.32	• • • • • • • • • • • • • • • • • • • •	6187.36	
5945.20	• • • • • • • • • • • • • • • • • • • •	6197.24	
5955.08	• • • • • • • • • • • • • • • • • • • •	6207.12	
5964.97	• • • • • • • • • • • • • • • • • • • •	6217.01	
5974.85	• • • • • • • • • • • • • • • • • • • •	6226.89	
5984.73	• • • • • • • • • • • • • • • • • • • •	6236.77	
5994.62	• • • • • • • • • • • • • • • • • • • •	6246.66	
6004.50		6256.54	
6014.38		6266.42	
6024.27	• • • • • • • • • • • • • • • • • • • •	6276.31	
6034.15	• • • • • • • • • • • • • • • • • • • •	6286.19	
6044.03	• • • • • • • • • • • • • • • • • • • •	6296.07	
6053.92	• • • • • • • • • • • • • • • • • • • •	6305.96	
6063.80	• • • • • • • • • • • • • • • • • • • •	6315.84	
6073.68	• • • • • • • • • • • • • • • • • • • •	6325.72	
6083.57	• • • • • • • • • • • • • • • • • • • •	6335.61	
6093.45	• • • • • • • • • • • • • • • • • • • •	6345.49	
6103.33	• • • • • • • • • • • • • • • • • • • •	6355.37	
6113.22	1	6365.26	1
6123.10	1	6375.14	1
6132.98	1	6385.02	1
6142.87	1	6394.91	1
6152.75	1	6404.79	1
6162.63	1	6414.67	1

^{1 -} Alternate channels. These channels are set aside for narrow bandwidth systems and should be used only if all other channels are blocked.

(3) 5 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive)		RECEIVE (transmit)
(MHZ)		(MHZ)
6110.75	•••••	6362.79
6115.69		6367.73
6120.63	• • • • • • • • • • • • • • • • • • • •	6372.67
6125.57	• • • • • • • • • • • • • • • • • • • •	6377.61
6130.51	• • • • • • • • • • • • • • • • • • • •	6382.55
6135.45	• • • • • • • • • • • • • • • • • • • •	6387.49
6140.40	• • • • • • • • • • • • • • • • • • • •	6392.44
6145.34	• • • • • • • • • • • • • • • • • • • •	6397.38
6150.28		6402.32
6155.22		6407.26
6160.16	• • • • • • • • • • • • • • • • • • • •	6412.20
6165.10	•••••	6417.14

(4) 1.6 MHZ BANDWIDTH CHANNELS

TRANSMIT		RECEIVE
(receive)		(transmit)
(MHZ)		(MHZ)
(FINZ)		(MIZ)
5925.90		6168.60
5927.50	• • • • • • • • • • • • • • • • • • • •	6170.20
5929.10		6171.80
6109.15		6361.19
6110.75		6362.79
6112.35		6364.39
6114.09		6366.13
6115.69		6367.73
6117.29		6369.33
6119.03		6371.07
6120.63		6372.67
6122.23		6374.27
6123.97		6376.01
6125.57		6377.61
6127.17		6379.21
6128.91		6380.95
6130.51		6382.55
6130.51		6384.15
6133.85	• • • • • • • • • • • • • • • • • • • •	6385.89
	• • • • • • • • • • • • • • • • • • • •	
6135.45	• • • • • • • • • • • • • • • • • • • •	6387.49
6137.05	• • • • • • • • • • • • • • • • • • • •	6389.09
6138.80	• • • • • • • • • • • • • • • • • • • •	6390.84
6140.40	• • • • • • • • • • • • • • • • • • • •	6392.44
6142.00	• • • • • • • • • • • • • • • • • • • •	6394.04
6143.74	• • • • • • • • • • • • • • • • • • • •	6395.78
6145.34	• • • • • • • • • • • • • • • • • • • •	6397.38
6146.94	• • • • • • • • • • • • • • • • • • • •	6398.98
6148.68	• • • • • • • • • • • • • • • • • • • •	6400.72
6150.28	• • • • • • • • • • • • • • • • • • • •	6402.32
6151.88	• • • • • • • • • • • • • • • • • • • •	6403.92
6153.62	• • • • • • • • • • • • • • • • • • • •	6405.66
6155.22	• • • • • • • • • • • • • • • • • • • •	6407.26
6156.82	• • • • • • • • • • • • • • • • • • • •	6408.86
6158.56	• • • • • • • • • • • • • • • • • • • •	6410.60
6160.16	• • • • • • • • • • • • • • • • • • • •	6412.20
6161.76	• • • • • • • • • • • • • • • • • • • •	6413.80
6163.50	•••••	6415.54
6165.10	• • • • • • • • • • • • • • • • • • • •	6417.14
6166.70	• • • • • • • • • • • • • • • • • • • •	6418.74
	2	n/a
	2	n/a
	2	n/a
6178.20	• • • • • • • • • • • • • • • • • • • •	6420.90
6179.80	• • • • • • • • • • • • • • • • • • • •	6422.50
6181.40	• • • • • • • • • • • • • • • • • • • •	6424.10

^{2 -} These frequencies may be assigned for unpaired use.

(5) 800 KHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)		RECEIVE (transmit) (MHZ)
5925.5	• • • • • • • • • • • • • • • • • • • •	6168.2
5926.3	• • • • • • • • • • • • • • • • • • • •	6169.0
5927.1	• • • • • • • • • • • • • • • • • • • •	6169.8
5927.9	• • • • • • • • • • • • • • • • • • • •	6170.6
5928.7	• • • • • • • • • • • • • • • • • • • •	6171.4
5929.5		6172.2
6177.8		6420.5
6178.6		6421.3
6179.4		6422.1
6180.2		6422.9
6181.0	• • • • • • • • • • • • • • • • • • • •	6423.7
6181.8	• • • • • • • • • • • • • • • • • • • •	6424.5

(6) 400 KHZ BANDWIDTH CHANNELS

TRANSMIT		RECEIVE
(receive)		(transmit)
(MHZ)		(MHZ)
5925.3		6168.0
5925.7		6168.4
5926.1		6168.8
5926.5		6169.2
5926.9		6169.6
5927.3		6170.0
5927.7		6170.4
5928.1		6170.8
5928.5		6171.2
5928.9		6171.6
5929.3		6172.0
5929.7		6172.4
6177.6		6420.3
6178.0		6420.7
6178.4		6421.1
6178.8		6421.5
6179.2		6421.9
6179.6		6422.3
6180.0		6422.7
6180.4		6423.1
6180.8	• • • • • • • • • • • • • • • • • • • •	6423.5
6181.2		6423.9
6181.6	• • • • • • • • • • • • • • • • • • • •	6424.3
6182.0		6424.7

(1) 10 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive (MHZ)			RECEIV (transm (MHZ)	
6545	1		6715	1
6555	1		6725	1
6565			6735	
6585			6745	
6595			6755	
6605			6765	
6615		• • • • • • • • • • • • • • • • • • • •	6775	
6625			6785	
6635			6795	
6645		• • • • • • • • • • • • • • • • • • • •	6805	
6655			6815	
6665		• • • • • • • • • • • • • • • • • • • •	6825	
6675		••••••	6835	
6685		• • • • • • • • • • • • • • • • • • • •	6845	
6695		•••••	6855	
6705		•••••••••••	6865	
6535	2	• • • • • • • • • • • • • • • • • • • •	6575	2

^{1 -} These frequencies may be assigned for unpaired use.

^{2 -} Available only for emergency restoration, maintenance bypass, or other temporary-fixed purposes. Such uses are authorized on a non-interference basis to other frequencies in this band. Interference analysis required by Section 94.63(a) does not apply to this frequency pair.

(2) 5 MHZ BANDWIDTH CHANNELS

TRANSMIT	1		RECEIV	E
(receive			(transm	
(MHZ)	•		(MHZ)	•
(,			\ <i>\</i>	
6545	1		6715	1
6550		••••••	6730	
6555	1	• • • • • • • • • • • • • • • • • • • •	6725	1
6560			6740	
6565			6735	
6585			6745	
6590			6750	
6595			6755	
6600		• • • • • • • • • • • • • • • • • • • •	6760	
6605		• • • • • • • • • • • • • • • • • • • •	6765	
6610			6770	
6615		• • • • • • • • • • • • • • • • • • • •	6775	
6620		• • • • • • • • • • • • • • • • • • • •	6780	
6625		• • • • • • • • • • • • • • • • • • • •	6785	
6630		• • • • • • • • • • • • • • • • • • • •	6790	
6635		• • • • • • • • • • • • • • • • • • • •	6795	
6640		• • • • • • • • • • • • • • • • • • • •	6800	
6645			6805	
6650		• • • • • • • • • • • • • • • • • • • •	6810	
6655		• • • • • • • • • • • • • • • • • • • •	6815	
6660		• • • • • • • • • • • • • • • • • • • •	6820	
6665		• • • • • • • • • • • • • • • • • • • •	6825	
6670		• • • • • • • • • • • • • • • • • • • •	6830	
6675		• • • • • • • • • • • • • • • • • • • •	6835	
6680			6840	
6685			6845	
6690		••••••	6850	
6695		••••••	6855	
6700		••••••	6860	
6705		••••••	6865	
6710	1	••••••	6720	1

^{1 -} These frequencies may be assigned for unpaired use.

(3) 1.6 MHZ BANDWIDTH CHANNELS

TRANSMIT		RECEIVE
(receive)		(transmit)
•		(MHZ)
(MHZ)		(MAZ)
6525.9		6870.9
6527.5	• • • • • • • • • • • • • • • • • • • •	6872.5
6529.1		6874.1
6543.4	1	6713.4 1
6545.0	1	6715.0 1
6546.6	1	6716.6 1
6548.4		6728.4
6550.0	• • • • • • • • • • • • • • • • • • • •	6730.0
6551.6	• • • • • • • • • • • • • • • • • • • •	6731.6
6553.4	1	6723.4 1
6555.0	1	6725.0 1
6556.6	1	6726.6 1
6558.4	• • • • • • • • • • • • • • • • • • • •	6738.4
6560.0	• • • • • • • • • • • • • • • • • • • •	6740.0
6561.6	• • • • • • • • • • • • • • • • • • • •	6741.6
6563.4	• • • • • • • • • • • • • • • • • • • •	6733.4
6565.0	• • • • • • • • • • • • • • • • • • • •	6735.0
6566.6	• • • • • • • • • • • • • • • • • • • •	6736.6
6583.4	• • • • • • • • • • • • • • • • • • • •	6743.4
6585.0	• • • • • • • • • • • • • • • • • • • •	6745.0
6586.6	• • • • • • • • • • • • • • • • • • • •	6746.6
6588.4	• • • • • • • • • • • • • • • • • • • •	6748.4
6590.0	••••••••	6750.0
6591.6 6593.4	• • • • • • • • • • • • • • • • • • • •	6751.6
	• • • • • • • • • • • • • • • • • • • •	6753.4
6595.0 6596.6	• • • • • • • • • • • • • • • • • • • •	6755.0 6756.6
6598.4	•••••••	6758.4
6600.0	•••••••••	6760.0
6601.6		6761.6
6603.4		6763.4
6605.0		6765.0
6606.6		6766.6
6608.4		6768.4
6610.0	• • • • • • • • • • • • • • • • • • • •	6770.0
6611.6		6771.6
6613.4		6773.4
6615.0		6775.0
6616.6	• • • • • • • • • • • • • • • • • • • •	6776.6
6618.4	• • • • • • • • • • • • • • • • • • • •	6778.4
6620.0	• • • • • • • • • • • • • • • • • • • •	6780.0
6621.6	• • • • • • • • • • • • • • • • • • • •	6781.6
6623.4		6783.4
6625.0	• • • • • • • • • • • • • • • • • • • •	6785.0
6626.6	• • • • • • • • • • • • • • • • • • • •	6786.6

6628.4	6788.4	
6630.0	6790.0	
6631.6	6791.6	
6633.4	6793.4	
6635.0	6795.0	
6636.6	6796.6	
6638.4	6798.4	
6640.0	6800.0	
6641.6	6801.6	
6643.4	6803.4	
6645.0	6805.0	
6646.6		
6648.4		
6650.0		
6651.6		
6653.4		
6655.0		
6656.6		
6658.4		
6660.0		
6661.6		
6663.4		
6665.0		
6666.6		
6668.4		
6670.0	6830.0	
6671.6	6831.6	
6673.4		
6675.0		
6676.6		
6678.4	6838.4	
6680.0		
6681.6		
6683.4		
6685.0		
6686.6	6846.6	
6688.4	6848.4	
6690.0		
6691.6	6851.6	
6693.4	6853.4	
6695.0	6855.0	
6696.6	6856.6	
6698.4	6858.4	
6700.0	6860.0	
6701.6	6861.6	
6703.4	6863.4	
6705.0	6865.0	
6706.6	6866.6	
6708.4	1 6718.4	1
6710.0	1 6720.0	1
6711.6	1 6721.6	1
 		

^{1 -} These frequencies may be assigned for unpaired use.

(4) 800 KHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)		RECEIVE (transmit) (MHZ)
6525.5	•••••••	. 6870.5
6526.3	•••••••	. 6871.3
6527.1	• • • • • • • • • • • • • • • • • • • •	. 6872.1
6527.9	•••••	. 6872.9
6528.7	• • • • • • • • • • • • • • • • • • • •	. 6873.7
6529.5	• • • • • • • • • • • • • • • • • • • •	. 6874.5

(5) 400 KHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)		RECEIVE (transmit) (MHZ)
6525.3	• • • • • • • • • • • • • • • • • • • •	6870.3
6525.7	• • • • • • • • • • • • • • • • • • • •	6870.7
6526.1	• • • • • • • • • • • • • • • • • • • •	6871.1
6526.5	• • • • • • • • • • • • • • • • • • • •	6871.5
6526.9	• • • • • • • • • • • • • • • • • • • •	6871.9
6527.3	••••••	6872.3
6527.7	•••••	6872.7
6528.1	••••••	6873.1
6528.5	• • • • • • • • • • • • • • • • • • • •	6873.5
6528.9		6873.9
6529.3	••••••	6874.3
6529.7	••••••	6874.7

(1) 5 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)		RECEIVE (transmit) (MHZ)
10552.5		10617.5
10557.5		10622.5
10562.5		10627.5
10567.5		10632.5
10572.5		10637.5
10577.5		10642.5
10582.5		10647.5
10587.5		10652.5
10592.5		10657.5
10597.5		10662.5
10602.5	•••••	10667.5

(2) 3.75 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)		RECEIVE (transmit) (MHZ)
10551.875		10616.875
10555.625		10620.625
10559.375		10624.375
10563.125	•••••	10628.125

(3) 2.5 MHZ BANDWIDTH CHANNELS

TRANSMIT		RECEIVE
(receive)		(transmit)
(MHZ)		(MHZ)
(11112)		(11112)
10551.25		10616.25
10553.75		10618.75
10556.25		10621.25
10558.75		10623.75
10561.25		10626.25
10563.75		10628.75
10566.25		10631.25
10568.75		10633.75
10571.25		10636.25
10573.75		10638.75
10576.25		10641.25
10578.75	• • • • • • • • • • • • • • • • • • • •	10643.75
10581.25	• • • • • • • • • • • • • • • • • • • •	10646.25
10583.75	• • • • • • • • • • • • • • • • • • • •	10648.75
10586.25		10651.25
10588.75		10653.75
10591.25		10656.25
10593.75		10658.75
10596.25		10661.25
10598.75		10663.75
10601.25	• • • • • • • • • • • • • • • • • • • •	10666.25
10603.75		10668.75
10606.25	• • • • • • • • • • • • • • • • • • • •	10671.25
10608.75	••••••••••	10673.75
10611.25		10676.25
10613.75		10678.75

(4) 1.6 MHZ BANDWIDTH CHANNELS

TRANSMIT		RECEIVE
(receive)		(transmit)
(MHZ)		`(MHZ)
(, ,
10550.9		10615.9
10552.5		10617.5
10554.1	• • • • • • • • • • • • • • • • • • • •	10619.1
10555.9		10620.9
10557.5		10622.5
10559.1		10624.1
10560.9		10625.9
10562.5		10627.5
10564.1		10629.1
10565.9		10630.9
10567.5		10632.5
10569.1		10634.1
10570.9		10635.9
10572.5		10637.5
10574.1		10639.1
10575.9		10640.9
10577.5		10642.5
10579.1		10644.1
10580.9		10645.9
10582.5	•••••	10647.5
10584.1	• • • • • • • • • • • • • • • • • • • •	10649.1
10585.9	•••••	10650.9
10587.5	•••••	10652.5
10589.1		10654.1
10590.9	•••••	10655.9
10592.5	••••••	10657.5
10594.1	•••••	10659.1
10595.9	••••••	10660.9
10597.5	••••••	10662.5
10599.1	• • • • • • • • • • • • • • • • • • • •	10664.1
10600.9		10665.9
10602.5		10667.5
10604.1		10669.1
10605.9		10670.9
10607.5	• • • • • • • • • • • • • • • • • • • •	10672.5
10609.1	• • • • • • • • • • • • • • • • • • • •	10674.1
10610.9	•••••	10675.9
10612.5	•••••	10677.5
10614.1	• • • • • • • • • • • • • • • • • • • •	10679.1

(5) 1.25 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)	RECEIVE (transmit) (MHZ)
10560.625	 10625.625
10561.875	 10626.875
10563.125	 10628.125
10564.375	 10629.375

(6) 800 KHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)		RECEIVE (transmit) (MHZ)
10605.5		10670.5
10606.3		10671.3
10607.1		10672.1
10607.9		10672.9
10608.7	• • • • • • • • • • • • • • • • • • • •	10673.7
10609.5	• • • • • • • • • • • • • • • • • • • •	10674.5
10610.5	•••••••••••	10675.5
10611.3	•••••••••••	10676.3
10612.1	••••••••••••	10677.1
10612.9	•••••••••••	10677.9
10613.7		10678.7
10614.5		10679.5

(7) 400 KHZ BANDWIDTH CHANNELS

TRANSMIT		RECEIVE
(receive)		(transmit)
(MHZ)		(MHZ)
10605.3	•••••	10610.3
10605.7	• • • • • • • • • • • • • • • • • • • •	10610.7
10606.1	• • • • • • • • • • • • • • • • • • • •	10611.1
10606.5	• • • • • • • • • • • • • • • • • • • •	10611.5
10606.9		10611.9
10607.3		10612.3
10607.7		10612.7
10608.1		10613.1
10608.5		10613.5
10608.9		10613.9
10609.3		10614.3
10609.7		10614.7
10610.3		10615.3
10610.7		10615.7
10611.1		10616.1
10611.5		10616.5
10611.9		10616.9
10612.3	• • • • • • • • • • • • • • • • • • • •	10617.3
10612.7	• • • • • • • • • • • • • • • • • • • •	10617.7
10613.1		10618.1
10613.5	• • • • • • • • • • • • • • • • • • • •	10618.5
10613.9		10618.9
10614.3		10619.3
10614.7		10619.7

10.7 - 11.7 GHZ COMMON CARRIER BAND

(1) 40 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)		RECEIVE (transmit) (MHZ)
10735 .		11225
10775 .		11265
10815 .	,	11305
10855 .	,	11345
10895 .	,	11385
10935 .		11425
10975 .		11465
11015 .		11505
11055 .		11545
11095 .		11585
11135 .		11625
11175 .		11665

(2) 30 MHZ BANDWIDTH CHANNELS

TRANSMIT (receive) (MHZ)	RECEIVE (transmit) (MHZ)
10715	11215
10755	11245
10795	11285
10835	11325
10875	11365
10915	11405
10955	11445
10995	11485
11035	11525
11075	11565
11115	11605
11155	11645
11185	11685

(3) 10 MHZ BANDWIDTH CHANNELS

TRANSMIT	RECEIVE
(receive)	(transmit)
(MHZ)	(MHZ)
(1912)	(11112)
10705	. 11205
10715	. 11215
10725	. 11225
10735	. 11265
10745	. 11235
10755	. 11245
10765	. 11255
10775	. 11305
10785	. 11275
10795	. 11285
10805	. 11295
10815	. 11345
10825	. 11315
10835	. 11325
10845	. 11335
10855	. 11385
10865	. 11355
10875	. 11365
10885	. 11375
10895	. 11425
10905	. 11425
10915	. 11405
10925	. 11415
10935	. 11465
10945	. 11435
10965	. 11455
10975	. 11505
10985	. 11475 . 11485
11005	. 11495
11015	. 11545
11025	. 11515
11035	
11045	
11055	
11065	
11075	
11085	
11095	
11105	
11115	
11125	
11135	
11145	
11155	
11165	
11175	. 11675
11185	. 11685
11195	. 11695

Appendix B

Summary of Comments in Docket 92-9

ANS Reply to Specific Industry Comments:

The notation (X/Y) is used to denote the originator's comment page (X) and paragraph (Y).

Association of American Railroads (AAR)

(2/2) "AAR is in agreement with purpose and intent behind the Commission's reallocation and rechannelization plan as proposed in the <u>Further Notice</u>, and urges the Commission to ensure that alternative frequencies will be available to 2 GHz licensees that are suitable for providing equivalent service with comparable reliability."

ANS Comment: ANS concurs. This will become a significant issue over the next decade.

American Personal Communications (APC)

(1/1,2/1) "American Personal Communications ("APC") generally supports the proposals contained in the above-captioned docket for reallocating several bands above 3 GHz for microwave use and modifying technical rules for the use of those bands To the extent that the Commission's proposals meet with the acceptance of the microwave community, especially as evidenced through the comments of the Telecommunications Industry Association Point-to-Point Communications Section, they should be adopted."

ANS Comment: ANS concurs with specific reservations regarding the TIA comments noted elsewhere in these comments.

(4/2) "The Commission and NTIA should specify the procedures under which [limited] incumbent fixed microwave users from the 2 GHz band would have access to frequencies in the 1.71-1.85 GHz band."

ANS Comment: ANS concurs.

(5/1) "APC also suggests that microwave licensees that are relocated from frequencies allocated to unlicensed uses (such as Apple's Data-PCS proposal) receive first priority to spectrum in the 1.71-1.85 band."

ANS Comment: Noted. Early resolution of unlicensed PCS use clearly is an industry high priority.

Associated PCN Company and Associated Communications of Los Angeles

(2/2) "Associated continues to believe that the Commission's efforts to find a place to relocate incumbent 2 GHz licensees are premature and unnecessary. PCS experiments which have been conducted by APCN and other entities have shown that PCS, using spread spectrum and frequency agile techniques, can co-exist in a non-interfering environment with incumbent 2 GHz licensees even in markets as congested as Los Angeles."

ANS Comment: ANS does not concur. ANS and others have taken issue with this position.

(4/3) "Spectrum Sharing Will Have to be Used in the 2 GHz Band in Any Event ... nearly 40% of the incumbent 2 GHz users in the Los Angeles area are government users."

ANS comment: ANS does not concur. Government users will have less immediate motivation to move than will private users. However, as microwave vendors lose incentive to market 2 GHz fixed point to point microwave equipment, even government users will feel pressure to move out of 2 GHz. Prior to this time, the 2 GHz government users represent a problem for potential PCS operators. This does not imply that spectrum sharing will have to be used. It has not been proven how this can be accomplished. It may be that PCS users may not be able to share the microwave channels. Rather, the PCS users may be blocked until the government users move.

(5/2) "The Bands Chosen for Relocation by the Commission are Already Congested. ... Associated has first-hand knowledge that the 6 and 11 GHz bands are heavily congested in the larger metropolitan areas and it will prove to be exceedingly difficult for incumbent 2 GHz users to relocate in these bands."

ANS Comment: ANS concurs. As noted previously, lack of microwave frequencies above 2 GHz will become more critical over the next decade.

American Petroleum Institute (API)

(ii/1) "The Commission is urged to carefully review optional channelization plans and to base its decision on the twin goals of spectrum efficiency and maximum equipment marketplace competition."

ANS Comment: ANS concurs.

(ii/3) "The Commission is urged to carefully review this issue again and provide relief in the bands 1710-1850 MHz or 3600-3700 MHz, or elsewhere below 3 GHz, for existing users having long paths that must be reaccommodated."

<u>ANS Comment</u>: Noted. Joint government and nongovernment use of the low frequency government bands (e.g. 3.6 - 3.7 GHz) administered by NTIA is a practical compromise.

(4/2) "API submitted a Statement in Support of each of these (UTC and Alcatel) Petitions for Rule Making."

ANS Comment: Noted.

(7/1) "Accordingly, API supports the measures proposed in the Further Notice."

ANS Comment: Noted.

(8/2) "Under the circumstances, the sharing of microwave spectrum between common carrier and private radio services represents a useful approach."

ANS Comment: ANS concurs.

(8/3) "While API generally supports private microwave access to the common carrier microwave bands, it is very concerned that the Commission not impose onerous antenna standards on private microwave system operators Part 94 eligibles should be able to continue to use antennas meeting the minimum standards set forth in Section 94.75 of the Commission's rules."

<u>ANS Comment</u>: While noting that upgrading antenna standards would increase the cost of antenna and tower installations, antenna standards greatly affect the ability of frequency planners to reuse microwave frequencies. ANS supports improved antenna standards from the perspective of increased spectrum efficiency.

(10/1) "API is supportive of the Commission's proposal to rechannelize the Frequency bands below 11,700 MHz to accommodate low density and medium density requirements. API believes the proposed channelization scheme offers the potential for improving spectrum efficiency."

ANS Comment: ANS concurs.

(13/1,13/2, 14/1) "Many of the systems currently licensed in the 2 GHz band simply cannot be accommodated in the spectrum at 6 GHz and above. ... It is imperative that frequency bands below 6 GHz be made available to accommodate the long distance requirements of private operational-fixed microwave licensees. ... API regarded the 3600-3700 MHz band as an excellent accommodation for these

longer distance requirements ... The band 3600-3700 MHz must be included as one element of the Commission's overall effort to provide meaningful relief for licensees who would otherwise continue [to] use the 2 GHz band. API strongly urges the Commission to change its position in regard to this band and to encourage NTIA to open this band for reaccommodation of 2 GHz licensees."

ANS Comment: ANS concurs.

American Telephone and Telegraph Company ("AT&T")

(2/2,3/1) "AT&T supports the Commission's efforts to rechannelize these bands to provide additional narrowband channels and to maintain coordination procedures to accommodate the relocation of 2 GHz incumbents."

ANS Comment: ANS concurs.

(3/1, 4/1) "However, if the Notice's proposal is implemented, scarce spectrum that is currently unoccupied would be needlessly channelized and incumbents in the 4 GHz and 6 GHz bands would both be unnecessarily disrupted The specific channelization proposals set forth by the Commission appear unnecessarily disruptive to 4, 6 and 11 GHz incumbents. Specifically, the channelizations described in the Notice, if adopted, would significantly reduce spectrum efficiency by revising the current channel boundaries and creating a myriad of additional coordination demands on current and relocating licensees. AT&T has developed alternative proposals, which should maintain current channelization integrity, create an expanded priority procedure to use spectrum more effectively, and provide separate FM and digital channelization schemes to satisfy the distance system needs of incumbent upper 6 GHz private band users."

ANS Comment: ANS, based on overall industry comments, has revised the proposed frequency plans to address the above issues. See Attachment A, Modified Plan at Sections 3-6.

(4/2, 5/1) "AT&T's plan for the 4 GHz common carrier bands avoids rechannelization in the relatively unused spectrum in u[n]paired channel 13 ... Because ... the Commission might later decide to allocate this channel for other uses ... AT&T additionally suggests in its 6 GHz common carrier spectrum plan that the Commission not channelize the spectrum in the lightly used guard bands, but reserve this spectrum for future needs such as personal communications services or other future technologies. Spectrum adjacent to these guard bands (channel pairs 11/21 and 18/28) also should not be rechannelized at this time in order to permit use of these bands for possible future technologies. ... At 11 GHz, the AT&T proposal preserves the currently clear band between 11185 and 11215 MHz and the lightly utilized adjacent spectrum for future Commission options as well."

ANS Comment: ANS does not concur. AT&T appears to be concerned about allowing room for PCS at bands above 2 GHz. This is inconsistent with the FCC proposal to place PCS at 2 GHz and maximize the use of the higher bands to accommodate the incumbent 2 GHz users.

(6/2) "AT&T also encourages the Commission to continue discussions with the National Telecommunications and Information Administration ("NTIA") for access by non-government licensees to the 1.71-1.85 GHz government band."

ANS Comment: ANS concurs and would suggest NTIA discussions be expanded to other government frequencies below 10 GHz.

(Appendices A-D) Several alternative plans are suggested.

ANS Comment: See Attachment A, Modified Plan at sections 3-6.

Excerpts from Appendix A-D

... would result in spectrum inefficiencies ... plan arbitrarily reassigns ... this reassignment is unnecessary as shown below ... plan destroys the existing junction ... assignments appear to be arbitrary and unnecessary ... better spectrum efficiency would result [with the AT&T plan] ... it [the Alcatel plan] is seriously flawed ... AT&T's plan proposal provides more orderly migration ... The proposed [AT&T] plan provides a better balance ... AT&T's plan proposal provides a better match ...

ANS Comment: Strong words with little technical justification. ANS has revised the plans to accommodate actual technical concerns. The AT&T proposal, while being complicated, has no obvious advantages when compared to the proposed frequency plans.

(Appendix E-1/2) "We support the use of common requirements for both Part 21 and Part 94 by the Commission in its establishment of coordination requirements.

ANS Comment: This is an issue most appropriately dealt with by the Part 21 and Part 94 users. ANS observes that the industry, through the TIA Bulletin 10, is facilitating a convergence of coordination requirements.

(Appendix E-1/4) "The time period proposed for reservation of growth channels is too short ... A coordination that reserves capacity for channel growth should be good for at least five years, in order to allow the investment to be justified ... Limiting the reservation period to just six months would not be sufficient to justify the long term investment of a radio route."

ANS Comment: Noted.

(Appendix E-1/6) "[Regarding Automatic Transmitter Power Control] The Rule change should allow for a 10 dB increase in radiated power."

ANS Comment: ANS concurs.

(Appendix E-1/8) "The antenna standards proposed do not reflect current capabilities for antenna directivety. The table should be updated to reflect state of the art antenna characteristics."

ANS Comment: ANS concurs.

(Appendix E-2/2) "Specific language should be incorporated into the Rule changes that allows for growth of existing systems that have already been coordinated."

ANS Comment: ANS concurs in concept. However, provision should be made for new users ready to implement systems. They should not be blocked indefinitely from using spectrum reserved for eventual expansion of existing systems.\

Although not part of this proceeding, ANS notes that on November 6, 1992, AT&T provided comments to NTIA regarding "future requirements for the use of the radio frequency spectrum in the United States and technology trends that would impact use of the radio spectrum." On page 5 of Exhibit B to that report, AT&T observed that: "Although the requirements for long distance cross country systems are rapidly being moved to the fiber network, the growth in local distribution and small cross section connections appears to offset the decrease in long haul systems. Congestion is still present in some of the bands within metropolitan areas." Note that this statement reinforces the need for low to medium density channelization for all microwave frequencies. It also points out the need to continue discussions with NTIA regarding joint use of government spectrum by nongovernment users.

Bell Atlantic Companies

(1/3) "Bell Atlantic generally supports the Commission's effort to adopt channelization plans for the upper bands to accommodate displaced wideband and narrow band systems."

ANS Comment: ANS concurs.

(2/1,3/4) "In addition, we encourage the FCC to adopt the established de facto industry standard channelization plan for the 6 GHz band, which allows for a 29.65 MHz channel separation rather than the Commission's proposal of 30 MHz While this [30 MHz channel separation] proposal appears reasonable, a closer look